IN THE CLAIMS:

Please amend the claims as indicated below.

1. (Currently Amended) A method for obtaining an attribute within a triangle [[in homogenous space]], comprising:

obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

for each vertex, transforming the world space coordinates and the attribute of the vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates, computing a set of [[homogenous]]homogeneous coefficients of the vertex based on the viewer space [[homogenous]]homogeneous coordinates, said homogeneous coefficients including perspective data, and projecting the viewer space coordinates of the vertex to coordinates in 2D screen space;

determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates; and

for each pixel affected by the triangle, computing, based on the [[homogenous]]homogeneous coefficients, a set of barycentric coefficients in [[homogeneous]]viewer space, and performing a linear interpolation based on the set of [[homogenous]]viewer space barycentric coefficients and the viewer space attributes of the vertices [in the viewer space] to obtain the attribute [in the homogenous space] of the pixel affected by the triangle.

2. (Currently Amended) A method as in claim 1, wherein for each vertex the coordinates and attribute in viewer space are represented respectively by ~~[Xih, Yih, Zih, Wi]~~ [*Xih, Yih, Zih, Wi*] and ~~[piah]~~ [*Pia...nh*], where 'i' is an index associated with the vertex and i = 1,2,3, and where Wi is a perspective correction parameter.

3. (Currently Amended) A method as in claim 2, wherein the [[homogenous]]homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are

calculated in ~~$\tilde{a}_i = \tilde{Y}jh \cdot Wk - \tilde{Y}kh \cdot Wj$;~~ $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, ~~$\tilde{b}_i = \tilde{X}jh \cdot Wk - \tilde{X}kh \cdot Wj$;~~ $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and ~~$\tilde{c}_i = \tilde{X}jh \cdot \tilde{Y}kh - \tilde{X}kh \cdot \tilde{Y}jh$~~, $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mode3+1, and wherein Wi and Wk are perspective correction parameters.

4. (Original) A method as in claim 1, wherein determining the pixels affected by the triangle includes rasterizing the triangle.

5. (Original) A method as in claim 1, wherein determining the pixels affected by the triangle includes providing blank pixel data associated with the affected pixels.

6. (Original) A method as in claim 5, wherein for N pixels affected by the triangle the blank pixel data includes N screen space coordinates $\{[X_1s, Y_1s], [X_2s, Y_2s], ...[X_Ns, Y_Ns]\}$.

7. (Original) A method as in claim 4, wherein the rasterization provides blank pixel data associated with the pixels affected by the triangle.

8. (Currently Amended) A method as in claim 3, wherein α, β, γ, represent the set of barycentric coefficients, wherein d1, d2, d3, represent intermediate values, and wherein the computations, for each pixel, of the set of barycentric coefficients, include calculating d1, d2 and d3, using the [[homogenous]]homogeneous coefficients, $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, in $d_i = (\tilde{a}_i \cdot X + \tilde{b}_i \cdot Y + \tilde{c}_i)$, and calculating the [homogenous]homogeneous space barycentric coefficients, α, β, γ, using the intermediate values d1, d2, d3, in $\alpha = \frac{d_1}{d_1 + d_2 + d_3}$, $\beta = \frac{d_2}{d_1 + d_2 + d_3}$, and ~~$\chi = \frac{d_3}{d_1 + d_2 + d_3}$~~ $\gamma = \frac{d_3}{d_1 + d_2 + d_3}$.

9. (Currently Amended) A method as in claim 8, wherein the linear interpolation, for each pixel, includes calculation of Z_pix, a Z-coordinate in [[homogenous]]homogeneous space, W_pix, a

perspective correction parameter, and Phi_pix, and attributes of the pixel in the [[homogenous]]homogeneous space, with the respective calculations being:

$$Z\_pix = \alpha \cdot Z1h + \beta \cdot Z2h + \gamma \cdot Z3h;$$

$$W\_pix = \alpha \cdot W1 + \beta \cdot W2 + \gamma \cdot W3h; \text{ and}$$

$$Phi\_pix = \alpha \cdot P1hi + \beta \cdot P2hi + \gamma \cdot P3hi .$$

10. (Currently Amended) A method as in claim 1, wherein the [[location and]] depth and perspective data of each of the pixels affected by the triangle is represented by [[coordinates]]parameters in the [[homogenous]]homogeneous space.

11. (Currently Amended) A method as in claim 1, wherein the attribute obtained in the [[homogenous]]homogeneous space is depth.

12. (Currently Amended) A method as in claim 1, wherein the attribute obtained in the [[homogenous]]homogeneous space is color.

13. (Currently Amended) A method as in claim 1, wherein the attribute obtained in the [[homogenous]]homogeneous space is texture.

14. (Currently Amended) A method as in claim 1, wherein the attribute obtained in the [[homogenous]]homogeneous space is shading.

15. (Currently Amended) A system for obtaining an attribute within a triangle in [[homogenous]]homogeneous space, comprising:

means for obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

[[for each vertex,]]means for transforming the world space coordinates and the attribute of [[the]]each vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates;

means for computing a set of [[homogenous]]homogeneous coefficients of [[the]]each vertex based on the viewer space coordinates[[, and]], said homogeneous coefficients including perspective data;

means for projecting the viewer space [[homogenous]]homogeneous coordinates of the vertex to coordinates in 2D screen space;

means for determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates; and

[[for each pixel affected by the triangle,]]means for computing, based on the [[homogenous]]homogeneous coefficients, a set of barycentric coefficients in [[homogeneous]]viewer space for each pixel affected; and

means for performing a linear interpolation based on the set of [[homogenous]]viewer space barycentric coefficients and the viewer space attributes of the vertices [[in the viewer space]] to obtain the attribute [[in the homogenous space]] of [[the]]each pixel affected by the triangle.

16. (Currently Amended) A method as in claim 15, wherein for each vertex the coordinates and attribute in viewer space are represented respectively by ~~[Xih, Yih, Zih, W1]~~ $[Xih, Yih, Zih, Wi]$ and ~~[piah]~~ $[Pia...nh]$, where 'i' is an index associated with the vertex and i = 1,2,3, and where Wi is a perspective correction parameter.

17. (Currently Amended) A system as in claim 16, wherein the [[homogenous]]homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and wherein the computing means includes means for calculating $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, based on the viewer space coordinates, in ~~$\tilde{a}_i = \tilde{Y}jh \cdot Wk - \tilde{Y}kh \cdot Wj$;~~ $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, ~~$\tilde{b}_i = \tilde{X}jh \cdot Wk - \tilde{X}kh \cdot Wj$;~~ $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and ~~$\tilde{c}_i = \tilde{X}jh \cdot \tilde{Y}kh - \tilde{X}kh \cdot \tilde{Y}jh$,~~ $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mode3+1, and wherein Wi and Wk are perspective correction parameters.

18. (Original) A system as in claim 15, wherein means for determining the pixels affected by the triangle includes means for rasterizing the triangle.

19. (Original) A system as in claim 15, wherein the means for determining the pixels affected by the triangle includes means for providing blank pixel data associated to these pixels.

20. (Original) A system as in claim 19, wherein for N pixels affected by the triangle the blank pixel data includes N screen space coordinates $\{[X_1s, Y_1s],[X_2s, Y_2s],...[X_Ns, Y_Ns]\}$.

21. (Original) A system as in claim 18, wherein the rasterization means provides blank pixel data associated with the pixels affected by the triangle.

22. (Currently Amended) A system as in claim 17 wherein α, β, γ, represent the set of barycentric coefficients, wherein d1, d2, d3, represent intermediate values, and wherein the means for computing, for each pixel, the set of barycentric coefficients, includes:

means for calculating d1, d2 and d3, using the [[homogenous]]homogeneous coefficients, $\widetilde{a}_i, \widetilde{b}_i, \widetilde{c}_i$, in $d_i = \left(\widetilde{a}_i \cdot X + \widetilde{b}_i \cdot Y + \widetilde{c}_i\right)$; and

means for calculating the [[homogenous]]homogeneous space barycentric coefficients, α, β, γ, using the intermediate values d1, d2, d3, in $\alpha = \frac{d_1}{d_1 + d_2 + d_3}$, $\beta = \frac{d_2}{d_1 + d_2 + d_3}$, and $\gamma = \frac{d_3}{d_1 + d_2 + d_3}$.

23. (Currently Amended) A method as in claim 22, wherein the linear interpolation means includes means for calculating, for each pixel, Z_pix, a Z-coordinate in [[homogenous]]homogeneous space, W_pix, a perspective correction parameter, and Phi_pix, and attributes of the pixel in the [[homogenous]]homogeneous space, with the respective calculations being: $Z\_pix = \alpha \cdot Z1h + \beta \cdot Z2h + \gamma \cdot Z3h$; $W\_pix = \alpha \cdot W1 + \beta \cdot W2 + \gamma \cdot W3h$; and $Phi\_pix = \alpha \cdot P1hi + \beta \cdot P2hi + \gamma \cdot P3hi$.

24. (Currently Amended) A method as in claim 15, wherein the [[location and]] depth and perspective data of each of the pixels affected by the triangle is represented by [[coordinates]]parameters in the [[homogenous]]homogeneous space.

25. (Currently Amended) A method as in claim 15, wherein the attribute obtained in the [[homogenous]]homogeneous space is depth.

26. (Currently Amended) A method as in claim 15, wherein the attribute obtained in the [[homogenous]]homogeneous space is color.

27. (Currently Amended) A method as in claim 15, wherein the attribute obtained in the [[homogenous]]homogeneous space is texture.

28. (Currently Amended) A method as in claim 15, wherein the attribute obtained in the [[homogenous]]homogeneous space is shading.

29. (Currently Amended) A programmable device for obtaining an attribute in [[homogenous]]homogeneous space, comprising:

a computing unit;

a processor; and

a memory with program instructions, the processor being operatively connected with the memory, and the computing unit, for causing the programmable device to perform the steps of:

obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

for each vertex, transforming the world space coordinates and the attribute of the vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates, computing a set of [[homogenous]]homogeneous coefficients of the vertex based on the viewer space [[homogenous]]homogeneous coordinates, said homogeneous coefficients including perspective data, and projecting the viewer space coordinates of the vertex to coordinates in 2D screen space;

determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates; and

for each pixel affected by the triangle, computing, based on the [[homogenous]]homogeneous coefficients, a set of barycentric coefficients in [[homogeneous]]viewer space, and performing a linear interpolation based on the set of [[homogenous]]viewer space barycentric coefficients and the viewer space attributes of the vertices [[in the viewer space]] to obtain the attribute [[in the homogenous space]] of the pixel affected by the triangle.

30. (Original) A programmable device as in claim 29, wherein the computing unit includes:

a unit having two ALUs (arithmetic logic units); and

a reciprocal unit.

31. (Original) A programmable device as in claim 29, wherein the processor includes at least one programmable single instruction multiple data (SIMD) scalar unit.

32. (Currently Amended) A programmable device as in claim 29,

further comprising[[:]] a bypass register, and

wherein the computing unit includes two-ALUs [[that are operative]]configured to operate with shifted processing cycles, using the bypass registers, to interleave triangle and pixel processing instructions.

33. (Original) A programmable device as in claim 29, further comprising a triangle rasterizer operative to produce blank pixel screen coordinates for the pixels affected by the triangle.

34. (Original) A programmable device as in claim 29, further comprising a vertex geometry processing unit operative to provide the viewer space coordinates.

35. (Original) A programmable device as in claim 29, operative to perform operations in long floating point (FP) mode, short FP mode, and mixed long-short FP mode.

36. (Original) A programmable device as in claim 29 operative to perform depth, color, shading and texture interpolations.

Please Add The New Claims Set Forth Below:

37. (New) A method for obtaining an attribute within a triangle, comprising:

obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

for each vertex, transforming the world space coordinates and the attribute of the vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates, computing a set of homogeneous coefficients of the vertex based on the viewer space homogeneous coordinates, said homogeneous coefficients including perspective data, and projecting the viewer space coordinates of the vertex to coordinates in 2D screen space;

determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates; and

for each pixel affected by the triangle, computing, based on the homogeneous coefficients, a set of barycentric coefficients in viewer space, and performing a linear interpolation based on the set of viewer space barycentric coefficients and the viewer space attributes of the vertices to obtain the attribute of the pixel affected by the triangle;

wherein the homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are calculated in $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mod3+1, and Wi and Wk are perspective correction parameters.

38. (New) A method for obtaining an attribute within a triangle, comprising:

obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

for each vertex, transforming the world space coordinates and the attribute of the vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer

space attribute, said viewer space coordinates being homogeneous coordinates, computing a set of homogeneous coefficients of the vertex based on the viewer space homogeneous coordinates, said homogeneous coefficients including perspective data, and projecting the viewer space coordinates of the vertex to coordinates in 2D screen space;

determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates; and

for each pixel affected by the triangle, computing, based on the homogeneous coefficients, a set of barycentric coefficients in viewer space, and performing a linear interpolation based on the set of viewer space barycentric coefficients and the viewer space attributes of the vertices to obtain the attribute of the pixel affected by the triangle;

wherein the homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are calculated in $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mod3+1, and Wi and Wk are perspective correction parameters, wherein α, β, γ, represent the set of barycentric coefficients, d1, d2, d3, represent intermediate values, and the computations, for each pixel, of the set of barycentric coefficients, include calculating d1, d2 and d3, using the homogeneous coefficients, $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, in $d_i = \left(\tilde{a}_i \cdot X + \tilde{b}_i \cdot Y + \tilde{c}_i\right)$, and calculating the homogeneous space barycentric coefficients, α, β, γ, using the intermediate values d1, d2, d3, in $\alpha = \frac{d_1}{d_1 + d_2 + d_3}$, $\beta = \frac{d_2}{d_1 + d_2 + d_3}$, and $\gamma = \frac{d_3}{d_1 + d_2 + d_3}$.

39. (New) A method for obtaining an attribute within a triangle, comprising:

obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

for each vertex, transforming the world space coordinates and the attribute of the vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates, computing a set of homogeneous coefficients of the vertex based on the viewer space homogeneous coordinates, said homogeneous coefficients including perspective data, and projecting the viewer space coordinates of the vertex to coordinates in 2D screen space;

determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates; and

for each pixel affected by the triangle, computing, based on the homogeneous coefficients, a set of barycentric coefficients in viewer space, and performing a linear interpolation based on the set of viewer space barycentric coefficients and the viewer space attributes of the vertices to obtain the attribute of the pixel affected by the triangle;

wherein the homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are calculated in $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mod3+1, and Wi and Wk are perspective correction parameters;

wherein α, β, γ, represent the set of barycentric coefficients, d1, d2, d3, represent intermediate values, and the computations, for each pixel, of the set of barycentric coefficients, include calculating d1, d2 and d3, using the homogeneous coefficients, $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, in $d_i = \left(\tilde{a}_i \cdot X + \tilde{b}_i \cdot Y + \tilde{c}_i\right)$, and calculating the homogeneous space barycentric coefficients, α, β, γ, using the intermediate values d1, d2, d3, in $\alpha = \frac{d_1}{d_1 + d_2 + d_3}$, $\beta = \frac{d_2}{d_1 + d_2 + d_3}$, and $\gamma = \frac{d_3}{d_1 + d_2 + d_3}$,

wherein the linear interpolation, for each pixel, includes calculation of Z_pix, a Z-coordinate in homogeneous space, W_pix, a perspective correction parameter, and Phi_pix, and attributes of the pixel in the homogeneous space, with the respective calculations being $Z\_pix = \alpha \cdot Z1h + \beta \cdot Z2h + \gamma \cdot Z3h$, $W\_pix = \alpha \cdot W1 + \beta \cdot W2 + \gamma \cdot W3h$, and $Phi\_pix = \alpha \cdot P1hi + \beta \cdot P2hi + \gamma \cdot P3hi$.

40. (New) A system for obtaining an attribute within a triangle in homogeneous space, comprising:

means for obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

means for transforming the world space coordinates and the attribute of each vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates;

means for computing a set of homogeneous coefficients of each vertex based on the viewer space coordinates, said homogeneous coefficients including perspective data;

means for projecting the viewer space homogeneous coordinates of the vertex to coordinates in 2D screen space;

means for determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates;

means for computing, based on the homogeneous coefficients, a set of barycentric coefficients in viewer space for each pixel affected; and

means for performing a linear interpolation based on the set of viewer space barycentric coefficients and the viewer space attributes of the vertices to obtain the attribute of each pixel affected by the triangle;

wherein the homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are calculated in $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mod3+1, and Wi and Wk are perspective correction parameters.

41. (New) A method for obtaining an attribute within a triangle, comprising:

means for obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

means for transforming the world space coordinates and the attribute of each vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates;

means for computing a set of homogeneous coefficients of each vertex based on the viewer space coordinates, said homogeneous coefficients including perspective data;

means for projecting the viewer space homogeneous coordinates of the vertex to coordinates in 2D screen space;

means for determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates;

means for computing, based on the homogeneous coefficients, a set of barycentric coefficients in viewer space for each pixel affected; and

means for performing a linear interpolation based on the set of viewer space barycentric coefficients and the viewer space attributes of the vertices to obtain the attribute of each pixel affected by the triangle;

wherein the homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are calculated in $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mod3+1, and Wi and Wk are perspective correction parameters,

wherein α, β, γ, represent the set of barycentric coefficients, d1, d2, d3, represent intermediate values, and the computations, for each pixel, of the set of barycentric coefficients, include calculating d1, d2 and d3, using the homogeneous coefficients, $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, in $d_i = \left(\tilde{a}_i \cdot X + \tilde{b}_i \cdot Y + \tilde{c}_i\right)$, and calculating the homogeneous space barycentric coefficients, α, β, γ, using the intermediate values d1, d2, d3, in $\alpha = \frac{d_1}{d_1 + d_2 + d_3}$, $\beta = \frac{d_2}{d_1 + d_2 + d_3}$, and $\lambda = \frac{d_3}{d_1 + d_2 + d_3}$.

42. (New) A method for obtaining an attribute within a triangle, comprising:

means for obtaining the vertices of a triangle, each vertex being represented by a set of coordinates in a world coordinate space and having an attribute;

means for transforming the world space coordinates and the attribute of each vertex to coordinates and an attribute in viewer space to create viewer space coordinates and a viewer space attribute, said viewer space coordinates being homogeneous coordinates;

means for computing a set of homogeneous coefficients of each vertex based on the viewer space coordinates, said homogeneous coefficients including perspective data;

means for projecting the viewer space homogeneous coordinates of the vertex to coordinates in 2D screen space;

means for determining, in the 2D screen space, pixels that are affected by the triangle based on the 2D screen space coordinates;

means for computing, based on the homogeneous coefficients, a set of barycentric coefficients in viewer space for each pixel affected; and

means for performing a linear interpolation based on the set of viewer space barycentric coefficients and the viewer space attributes of the vertices to obtain the attribute of each pixel affected by the triangle;

wherein the homogeneous coefficients of the vertex are $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, and based on the viewer space coordinates they are calculated in $\tilde{a}_i = Yjh \cdot Wk - Ykh \cdot Wj$, $\tilde{b}_i = Xjh \cdot Wk - Xkh \cdot Wj$, and $\tilde{c}_i = Xjh \cdot Ykh - Xkh \cdot Yjh$, where j = i mod3+1, and k = j mod3+1, and Wi and Wk are perspective correction parameters;

wherein α, β, γ, represent the set of barycentric coefficients, d1, d2, d3, represent intermediate values, and the computations, for each pixel, of the set of barycentric coefficients, include calculating d1, d2 and d3, using the homogeneous coefficients, $\tilde{a}_i, \tilde{b}_i, \tilde{c}_i$, in $d_i = \left(\tilde{a}_i \cdot X + \tilde{b}_i \cdot Y + \tilde{c}_i\right)$, and calculating the homogeneous space barycentric coefficients, α, β, γ, using the intermediate values d1, d2, d3, in $\alpha = \frac{d_1}{d_1 + d_2 + d_3}$, $\beta = \frac{d_2}{d_1 + d_2 + d_3}$, and $\gamma = \frac{d_3}{d_1 + d_2 + d_3}$, wherein the linear interpolation, for each pixel, includes calculation of Z_pix, a Z-coordinate in homogeneous space, W_pix, a perspective correction parameter, and Phi_pix, and attributes of the pixel in the homogeneous space, with the respective calculations being $Z\_pix = \alpha \cdot Z1h + \beta \cdot Z2h + \gamma \cdot Z3h$, $W\_pix = \alpha \cdot W1 + \beta \cdot W2 + \gamma \cdot W3h$, and $Phi\_pix = \alpha \cdot P1hi + \beta \cdot P2hi + \gamma \cdot P3hi$.